

SULLIVAN COUNTY, TENNESSEE

8-103 Peak Stormwater Management and Erosion and Sediment Control Pollution Prevention- Land disturbance and other forms of site excavation can contribute to the degradation of land surfaces and streams, erosion, siltation, earth slides, mudflows, dusty conditions, clogged storm sewers, additional road maintenance cost, increased water runoff and localized flooding. Furthermore, Sullivan County's streams, creeks, sinkholes, rivers and lakes have a high concentration of soil sedimentation due in part from poor construction practices. It is the intent of this section to protect the health and safety of residents and adjoining or nearby property in the county, including land, waterways, ridges, hills and vegetation through the regulation of erosion and sedimentation control measures. Except as otherwise provided for, the following regulations shall apply in all zoning districts of the unincorporated territories of Sullivan County, as illustrated on the official *Sullivan County Zoning Map*:

8-103.1 Definitions - The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them, except where the context clearly indicates a different meaning:

Best Management Practices (BMP): Schedules of Activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control site run-off, spillage, or leaks, sludge or waste disposal, or drainage from raw material storage.

Contaminant: Any physical, chemical, biological, or radiological substance or matter in water.

Cut: means the portion of land surface or area from which earth has been or will be removed by excavation; also, the depth below original ground surface to excavated surface.

Director: The Director of Planning & Codes of the County or his/her designee, who is responsible for the implementation of the provisions of these Rules & Regulations.

Discharge: To dispose, deposit, spill, pour, inject, seep, dump, leak or place by any means, or that which is disposed, deposited, spilled, poured, injected, seeped, dumped, leaked, or placed by any means including any direct or indirect entry of any non-storm water solid or liquid matter into the municipal separate storm sewer system.

Erosion – means any removal or loss of soil by the action of wind and water. Erosion includes both the detachment and transportation of soil particles.

Erosion and Sediment Control Measures: means one or more of the following measures, or other methods of slowing or stopping the removal of soil by wind, water, or gravity used singularly or in combination as appropriate:

- a. *Diversion:* A swale or channel with supporting ridge (berm, dike, or wall) constructed across a sloping land surface along the contour, or with predetermined grades, to intercept and divert surface runoff before it gains sufficient volume or velocity to create conditions of erosion.
- b. *Drains:* Underground conduits or filter drains to reduce surface runoff or lower a high water table.
- c. *Grade stabilization structures:* Drop structures made of concrete, corrugated metal pipe or other suitable materials, which dissipate the energy of flowing water by dropping it in a relatively short horizontal distance.
- d. *Grassed waterways:* A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses used to carry surface water.
- e. *Land grading:* Reshaping the ground surface by grading to planned slopes and configurations that will prevent excessive erosion conditions.
- f. *Mulching:* The application of plant or other suitable materials on the soil surface to conserve moisture, reduce erosion and aid in establishing plant cover.
- g. *Sediment and erosion control devices barriers:* A temporary device barrier installed to intercept runoff containing sediment. The device shall settle out sediment or filter sediment and allow runoff to pass through. Sediment barriers may include straw bale barriers and silt fences when installed. **Any method approved by the Tennessee Department of Environment and Conservation Office may be utilized, as appropriate to the site; and**
- h. *Temporary cover:* Any method approved by the Tennessee Department of Environment and Conservation to temporarily stabilize disturbed areas.

Excavation: means the act of removing dirt or soil (see cut).

Fill: means the portion of land surface or area to which soil, rock or other materials have been or will be added; height above original ground surface after the material has been or will be added.

Grade: means the slope or elevation of the ground surface prior to or after cutting and filling.

Grading: means any operation or occurrence by which the existing site elevations are changed by cutting, filling, borrowing or stock piling, or where any ground cover, natural or manmade, is removed, or any buildings or other structures are removed or any watercourse or body of water, either natural or manmade, is relocated on any site, thereby creating an unprotected area. Grading shall be synonymous with land disturbance activity.

Hot Spots: Sites, developments, or uses that have the potential of discharging pollutants that are not normally found in storm water, these sites could include concrete and asphalt facilities, auto repair, auto supply and large commercial parking lots.

Illegal Connections: Illegal and/or unauthorized connections to the municipal (city or county) separate storm water system whether or not such connections result in discharges into that system.

Immediate threat to public health and safety: means a very serious threat to the community or adjacent property including, but not limited to, clogged drainage ditches, flooding of adjacent properties, threat of landslides or other problems

Land Disturbing Activity: means any activity, which removes or significantly disturbs the vegetative cover, including clearing and grubbing operations and top soil stripping.

Land disturbance plan (grading plan): means the plan required before a grading permit may be issued. It consists of a narrative description and appropriate drawings and plans that spell out the methods, techniques and procedures to be followed on a site to control erosion and other potential degradation of adjoining or nearby properties, during and after development, including methods of final stabilization of the site. The plan shall also include stormwater conveyance and management systems, where applicable. Supporting technical design information must be provided for erosion and sediment control and measures and for the design of the permanent stormwater conveyance and management systems.

Municipal Separate Storm Sewer System (MS4): The conveyances of owned or operated by the County for the collection and transportation of stormwater, including but not limited to, the roads and streets and their drainage systems, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

National Pollutant Discharge Elimination System (NPDES) permit: A permit issued pursuant to 33 USC 1342.

Owner: means the person or entity holding the registered title to property. The county property tax rolls shall be prima facie evidence that the persons or entity listed therein is the registered owner.

Permit holder: means the owner of the property or the owner's representative in whose name a permit has been applied for and issued by the county Land Use Office.

Pollutant: Sewage, industrial wastes, other wastes or materials (liquids or solids).

Riparian Zone/Natural buffer: means the existing wooded buffers, meadows and fields along the banks of any stream, creek, or river, (as indicated on the latest version of the USGS topographical maps as blueline streams) which serve as natural elements protecting the water quality.

Sediment: means rocks, sand, gravel, silt or other material deposited by action of wind, water or gravity.

Sedimentation: means the action of settling out of the soil particles, which are transported by wind, water, or gravity.

Stormwater run-off (also called storm water): That portion of the precipitation on a drainage area that is discharged from the area into the municipal separate storm sewer system.

Surface water: Includes water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes and reservoirs.

Stormwater Pollution Prevention Plan (SWPPP) - This is a combination of the Erosion and Sediment Control Plan and a narrative in accordance with the State of Tennessee's current Construction General Permit.

TDEC: The Tennessee Department of Conservation and Environment.

Water or waters of the State: Any and all water, public or private, on or beneath the surface of the ground, which are contained within flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

2.103.2 Grading Permit

1. *Requirement* - Except as otherwise exempted in section 8-103.3, no individual, property owner or other legal entity shall engage in any land disturbing activity which will modify the existing grade and/or may result in increased soil erosion or sedimentation including, but not limited to, clearing, stripping, grading, excavating, transporting, and filling unless a grading permit and land disturbing plan has first been obtained from the County Land Use Office. The owner of the property or his representative shall complete an application for the permit and shall submit a proposed grading plan and land disturbing plan with the application. The property owner shall be responsible for compliance with all provisions of this section. The grading permit does not preclude additional permits or authorization required by the State of Tennessee or the county.
2. *Planning Commission or Building Commissioner Authorization* – In instances where a proposed land disturbance activity will equal or exceed 1 acre, is part of a larger common development which will disturb at least 1 acre, or will occur on any tract as a part of an overall high-density residential, commercial or manufacturing development plan, or will occur as a part of an environmental restoration project under the supervision of the United State Environmental Protection Agency or the State Department of Environment and Conservation or their successors, no grading permit shall be issued by the county until the grading plan and land disturbing plan is reviewed and approved by the Planning Commission and/or the Building Commissioner.
3. *Pre-construction Meeting* – For projects which drain into a siltation impaired stream or into an Exceptional Water of the State, a pre-construction meeting shall be held between the County and the Owner/Developer before the grading permit is issued. The purpose of the pre-construction meeting is to review the approved plan, SWPPP, inspection requirements, maintenance requirements, other items, and to discuss the importance of protecting the water quality of the receiving stream.

8-103.3 Properties Exempt from Grading Permit - The following uses and activities shall be exempt from the required grading plan and issuance of grading permit with the following guidelines:

1. *Single-Family residences* – The construction of a single-family residence, addition to an existing single-family residence or all permitted accessory structures on a legal lot shall be exempt from the grading permit process, provided, however, such construction shall be required to comply with the erosion control requirements set forth herein. Upon receipt of a building permit, the property owner shall be advised by an employee of the county as to the minimum erosion and sedimentation control measures, to ensure practical management of stormwater run-off. All run-off of water and/or sedimentation shall be the responsibility of the current property owner and any clean-up of such shall be at no cost to the county.
2. *Public Utilities and Roadway Construction* – The installation, maintenance and repair of any public utility as well as public roadway and storm drainage construction and maintenance by governmental agencies and/or their agents; provided, however that such land disturbing activity shall comply fully with the rules and regulations set forth by the Tennessee Department of Environment and Conservation *Tennessee's current Construction General Permit, July 1, 2000*.
3. *Agricultural Uses* – Farming or other accepted agricultural uses, as identified in the Tennessee Right to Farm Act (T.C.A. § 43-26-103), or as hereafter amended.

4. Lawns/Gardens/Landscaping – Home gardens, home landscaping or lawn preparation on existing lots or parcels shall be exempted from the provisions stated in this article unless the possibility for erosion or alteration of drainage patterns or structures is such to necessitate a grading permit and/or alternative plan.
5. Silviculture Uses – The timbering and harvesting of trees strictly as a silviculture practice and not as a precursor to later development. However, timbering activities should follow best management practices, as outlined in the *Guide to Forestry Best Management Practices* – Tennessee Department of Agriculture, Division of Forestry, or current revisions, to protect streams and other sensitive areas.

8-103.4 Land Disturbance Plan (Grading Plan) - The land disturbance plan or grading plan shall comply with the minimum general and technical requirements set forth in this section. The complexity of the plan shall be commensurate with the severity of the site conditions and potential for off-site damage. The Planning Commission and/or the staff planner may require additional information if deemed necessary and appropriate to evaluate the feasibility of the plan. The grading plan shall be submitted and approved prior to any grading or construction activities.

1. Plan Required – Except as otherwise exempted from the requirements of this article, a grading plan shall be required prior to the issuance of a grading or building permit. The plan shall identify the specific and appropriate erosion control practices and sediment trapping facilities proposed for the site to be disturbed as well as a schedule for implementation and maintenance. The plan shall also identify final stabilized conditions for the site, provisions for removing temporary control measures and stabilization of the site when temporary measures are removed, permanent stormwater conveyance structures and maintenance requirements for any permanent measures.
2. Professional Design – The grading plan shall be developed by a qualified design professional, licensed to practice in the State of Tennessee who has completed and been certified in the stormwater, erosion and sediment control for stormwater quality (CPESC-SWQ), such as a qualified professional engineer, qualified landscape architect, or qualified land surveyor; or Certified Professional in Erosion and Sediment Control (CPESC).

For projects which require a construction general permit through the State of Tennessee, the SWPPP (plan and narrative) shall be prepared by a person in accordance with the current State of Tennessee Construction General Permit and submitted to the County. The SWPPP shall contain all required information at required by the current State of Tennessee Construction General Permit. Be aware that the requirements for projects which drain into an impaired stream or Exceptional Waters of the State are different than for projects draining to an unimpaired stream.

3. Erosion & Sedimentation Control – Erosion control measures shall be designed and provided in accordance with the latest version of the ***Tennessee Erosion and Sediment Control Handbook*** and Tennessee's Construction General Permit. If there is a conflict between these regulations and the State of Tennessee's Regulation, the most stringent regulation shall apply. Areas that are to be developed or excavated shall apply these guidelines, fitting the appropriate measures to the specific soils and topography so as to minimize soil erosion and surface water runoff. Erosion and sediment control measures shall be maintained until the site is significantly stabilized and maintained when necessary.

All perimeter sediment control devices such as construction exits, earth berms/dikes, swales, sediment basins sediment traps, and other perimeter drainage and sedimentation control measures shall be installed in conjunction with initial work and must be in place and functional prior to the initial grading operations.

All erosion and sediment control devices shall be designed for the 2 year, 24 hour storm as a minimum. For drainage area of 10 acres or more to a single outfall point, a sediment basin(s) or equivalent measures shall be used and designed for the 2 year, 24 hour storm.

For projects which drain into an impaired or exceptional state water, the erosion and sediment control devices shall be designed for the 5 year, 24 hour storm and a sediment basin or equivalent measures shall be used for drainage areas of 5 acres or more to a single outfall point.

4. Protection of Natural Vegetation and Trees – Natural vegetation shall be retained and protected whenever feasible during construction. If an area is stripped of vegetation during construction, the exposed area shall

be limited to the smallest practical size, and durations of the exposure limited to the shortest practical time. Temporary barriers shall be maintained around the drip line/canopy of the existing trees to be protected.

5. Minimum Information Required – It shall be at the discretion of the Building Commissioner how much information is necessary to obtain a permit. At a minimum, the following information shall be required in order to evaluate the proposed development.
 - a. Name, address and all available numbers of the permit holder, and the owners and developer, if other than the permit holder, for the property to be graded.
 - b. The registration seal and signature of the engineer, landscape architect, land surveyor or Certified Professional in Erosion and Sediment Control (CPESC) who prepared, designed and referenced the plan.
 - c. Cover letters addressed to the Planning Commission and/or Building Commissioner stating the intent of plans and project description.
 - d. A plan which is drawn to a scale no less than one inch equals 100 feet, including predevelopment topographic conditions and post-development grades. The contour interval shall be no greater than five feet. The plan shall include off-site existing topographic conditions extended to a minimum of 25 feet beyond the boundaries of the subject tract of land if grading is designed to be within 25 feet of any boundary line. The pre-development conditions survey shall also include information on all public roads adjoining the subject property.
 - e. The site location, boundaries, adjacent properties, location of any existing or proposed buildings or structures on the property or on adjacent land within 100 feet of the area to be disturbed, floodplain areas, ditch lines and any existing on-site and off-site structural or natural features of the land which have a significant impact on drainage or sediment control.
 - f. Outline of all drainage basins within the project area.
 - g. Identification of all streams, wetlands and sinkholes within the project area.
 - h. The location and a description of the temporary and permanent erosion control measures and drainage apparatuses to be constructed and structural changes and improvements to the land, including clearing and grading limits, daily cleanup and site control practices and other activities to mitigate the adverse impact of land disturbance.
 - i. A time schedule for initiation and completion of the measures and devices and periodic maintenance after completion. A general sequence of construction explaining when sediment control, drainage, and stormwater management devices are to be installed in relation to other components of the site development is to be provided on the plans. The sequence of construction shall state that no clearing or grading may begin until all perimeter sediment control devices are in place and functional.
 - j. Stormwater conveyance system
 - k. Stormwater Management system design and calculations.
6. Final Inspections Required – Upon completion of the development, the design professional engineer who designed the stormwater conveyance and management system, or another design professional qualified to design stormwater systems, shall inspect the as-built condition design and issue a letter to the county certifying that such design complies with the approved plans, will support the stormwater run-off and complies with all requirements stated herein. All approvals of a final plat, final site plan and/or Certificate of Occupancy shall be withheld until such as-built inspection has been certified as stated above by the engineer who designed the stormwater plan.

For drainage areas of 10 acres or more to a single outfall (5 acres or more if draining to siltation or stream-side habitat alteration impaired or exceptional waters of the state), a site assessment by the design professional who prepared the plans shall be performed within 1 month of grading or clearing operations starting to verify the installation, functionality and performance of all erosion and sediment control measures on the plans and in the SWPPP. Any issues shall be addressed immediately and the plans and SWPPP updated, if applicable.

The Building Commissioner, with the assistance of others, shall make periodic inspections, during construction and development, of the land disturbing activities, the stormwater management system installations, and other activities requiring a grading permit to ensure compliance with the approved plan. For all construction sites draining to siltation impaired streams or exceptional waters of the State, the County shall perform at least monthly inspections. Inspections will evaluate whether the measures required in

the approved plan and/or grading permit and undertaken by the Developer are effective in controlling erosion. The right of entry to conduct such inspections shall be expressly reserved in the permit.

As a minimum, the owner/operator of any construction project which requires a land disturbance plan is required to perform twice weekly inspections of their erosion and sediment control devices and to perform required maintenance in a timely manner. If the construction project requires a construction stormwater permit through the State of Tennessee, the owner/operator shall perform inspections, site assessments, maintenance of devices, and documentation in accordance with the State of Tennessee's current Construction General Permit.

8-103.5 Construction Access Routes - A stabilized stone pad, meeting requirements of the Tennessee Erosion and Sediment Control Handbook, shall be placed at any point where traffic will be entering and leaving a construction site to or from a public road prior to the initiation of any grading work. Stone pads shall contain ASTM-1 stone, six inches thick, and shall be placed from the public road into the construction site a minimum width of 12 feet and length of 100 feet for commercial and 40 feet for residential developments. If there is runoff flowing down the construction exit to the street, a mountable stone berm or equivalent measures shall be used to direct the runoff to sediment control devices adjacent to the exit.

8-103.6 Cut and Fill Slopes - Permanent cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Consideration shall be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions and other applicable factors. Any slopes installed at two foot horizontal to one foot vertical or steeper shall be stabilized with rock riprap or other acceptable method approved by the Planning Commission and/or staff planner and Building Commissioner.

8-103.7 Stabilization of Denuded Areas and Soil Stockpiles - Permanent erosion control measures shall be applied to denuded areas within 15 14 days after final grade is reached on any portion of the site. Soil stabilization shall also be applied within 15 14 days to any denuded area, which may not be at final grade, but will remain dormant (undisturbed by construction activity) for longer than 30 14 days. For slopes 3:1 or steeper, they must be temporarily or permanently stabilized within 7 days of grading ceasing on those slopes.

Any temporary soil stockpiles shall be stabilized or protected with sediment trapping measures to prevent erosion. Stockpiles of soil, fill or other materials shall not be placed in an area that may cause a site visibility hazard, such as within a right-of-way. Applicable erosion control measures shall include establishment of vegetation, mulching and the early application of gravel base on areas to be paved.

Selected permanent or temporary erosion control measures should be appropriate for the time of year, site conditions and estimated duration of use. Under no circumstances shall this local requirement relieve the applicant from complying with the TDEC General Permit No. TNR 10-0000 Construction General Permit for Stormwater Discharges.

8-103.8 Protection of Adjacent Properties

1. Downhill Protection – All properties adjacent and/or downhill from the site of a land disturbance shall be protected from soil erosion and sedimentation. This shall be accomplished by preserving a well-vegetated buffer strip around the lower perimeter controls such as sediment barriers, filters or dikes, or sediment basins, or by a combination of such measures.
2. Use of Buffer Strips – Vegetated buffer strips shall be used alone only where stormwater runoff is anticipated to occur through sheet flow and shall be a minimum of 20 feet in width. If at any time it is found that a vegetated buffer strip alone is ineffective in stopping erosion onto adjacent property, additional perimeter controls shall be provided by the owner.
3. Sediment Control – Sediment basins and traps, perimeter dikes, sediment barriers, check-dams, diversions and other erosion control measures intended to trap sediment on-site to protect downstream or adjacent properties shall be constructed as the first step in grading and shall be made functional prior to disturbance of upslope land. Earthen structures such as dams, dikes and diversions shall be seeded and mulched/strawed within seven days of installation.

The Building Commissioner has the authority, at his/her discretion, to require ground cover or other remediation measures preventing stormwater, erosion and sediment run-off, if either determines, after construction begins, that the plan and/or implementation schedule approved by the Planning Commission does not adequately provide the protection intended by this Resolution and the plan approved by the Planning Commission. Additional protective measures required by the Building Commissioner are subject to appeal under the procedures outlined in the Zoning Resolution.

4. Stormwater Runoff – Stormwater runoff shall be managed to protect downstream or adjacent properties from sediment runoff, erosion, or an increase in runoff rate that could damage those properties. From disturbed areas one acre of greater shall pass through a sediment basin or other suitable sediment trapping facility. All storm drainage inlets shall be protected during construction with a sediment barrier to prevent clogging and localized flooding. All means of protection shall be maintained and monitored throughout construction.

8-103.9 Disturbance in and along Streams and Floodways - The applicant for proposed land disturbance activities in streams or other Waters of the State (defined by a blue line on a 7 ½ minute United States Geological Survey quadrangle) and designated floodways shall be required to provide evidence of obtaining appropriate permits from federal and state regulatory agencies or a written waiver of such permits prior to the issuance of a grading permit by the county. In all cases where the development site has a stream blue line streams and is not designated as a floodway on the most recent Flood Insurance Rate Map or other best available certified data, a minimum of 20 feet shall be reserved along the highest water mark or creek bank on both sides of the channel as a protected undisturbed riparian/buffer zone.

A minimum twenty-five (25) foot permanent undisturbed buffer shall be provided from the top of bank along both sides of streams or Waters of the State except as necessary for the crossing of the stream for installation of utilities, development of roads, or construction of outfalls for stormwater facilities, related drainage improvements and for removal of invasive species to enhance the existing buffer. These utility, road, and stormwater outfall disturbances shall be designed to minimize disturbance and impact on the stream and its buffers. Any disturbance to a stream or wetland requires an Aquatic Resource Alteration permit through the State of Tennessee.

During construction, a 30' average (15' minimum) undisturbed buffer or equivalent measures, shall be provided from the top of the stream bank. If the stream is siltation or streamside habitat impaired or an exceptional water of the state, the undisturbed buffer during construction is increased to a 60' average (30' minimum) or equivalent measures.

(Amended May 20, 2013)

8-103.10 Peak Stormwater Management (Drainage Plan) – Pre-construction and Post-construction

1. Purpose – The intent of this section is to protect the health and safety of the residents of the county; to control the level and intensity of stormwater runoff consistent with existing runoff levels; to minimize expenditure of public funds for costly flood control projects; to minimize the need for rescue and relief efforts associated with flooding; to maximize beneficial use of land without incurring flood hazard potential; to ensure a functional drainage system that will not result in excessive maintenance costs; to encourage the use of natural and aesthetically pleasing design; to ensure water quality; and to protect or improve groundwater or surface waters.
2. Site Plan Approval – Prior to approval of the site development plan or final subdivision plat; the county Planning & Codes department in consultation with the design professional preparing the site development plan or final subdivision plat shall determine whether there is a need for a stormwater management plan based upon historical findings, any current adopted floodplain studies, hydrologic calculations as may be required, and other factual data as may be available. When a stormwater management plan is required, such plan shall be concurrently submitted to the Highway and Planning & Codes departments for review and recommendations prior to consideration by the Planning Commission.
3. Improvements Required – The Planning Commission may require, as necessary, structural or other improvements designed to detain the level and intensity of stormwater runoff associated with the land development site. A drainage calculation report shall be addressed and submitted to the Planning Commission, as prepared by a licensed engineer. All plans and reports shall be original and wet stamped by such reporting engineer and addressed to the county directly. Any stormwater runoff, which is channeled, either through structural facilities or graded ditches, to adjacent properties, the developer shall be responsible for preparing,

securing and recording a drainage easement to ensure that all adjacent land owners who may become affected by the development, now or in the future, are aware and agree to such plan.

If stormwater management is required, best management practices shall be implemented that accommodate any increase in stormwater runoff generated by the development in a manner in which the pre development levels of runoff for the two (2) and ten (10) year storm events are not increased during and following development and construction. The Planning Commission reserves the right to require stormwater management to maintain pre development levels of runoff for the 25, 50, or 100-year storm event if a known flooding problem exists downstream.

Sullivan County wishes to minimize the negative effects of development on our environment, on our economy, and on our health while at the same time reducing development costs for the developers and maintenance costs for the county and the developer. All efforts should be utilized to implement site design and non-structural stormwater management practices to reduce and minimize runoff in new development. Efforts to enhance infiltration, passage or movement of water into the soil surface, reduction of hard surfaces, minimizing the concentration of runoff, and lengthening of the time of concentration should be a priority:

The following BMPs and stormwater credits can be applied to the peak and water quality stormwater calculations thereby reducing the size and cost of the stormwater BMPs:

(a) Natural area conservation

The preservation of forest, wetlands, pasture land, and other sensitive areas of existing vegetation thereby retaining pre-development hydrologic and water quality characteristics. If these areas are undisturbed and placed in a recorded protective easement, these areas may be subtracted from the total site area when calculating water quality volume. The post development curve numbers for these areas can be modeled as forest in good condition.

(b) Disconnection of rooftop runoff

Rooftop runoff that is disconnected from another impervious surface and directed over a pervious area will infiltrate into the soil or be filtered by the surface material. The longer the flow path of the water from the pipe across vegetated areas, the greater the filtering and infiltration of the run-off which in turn improves water quality and reduces downstream run-off.

If the lot is graded to disperse the rooftop runoff as sheet flow through at least 50' of thick grass or other thick vegetation or through at least 25' of existing woodlands, 50% of the rooftop impervious area draining through the vegetation may be modeled as grass in good condition when calculating the post development curve number. If reforestation or planted landscape beds equal in area to 50% of the rooftop area is placed in the path of the disconnected rooftop runoff, then the remaining 50% of the rooftop impervious area may be modeled as grass in good condition when calculating the post development curve number.

If the rooftop runoff is discharged into a properly designed and constructed bioretention facility/rain garden onsite, 100% of the rooftop impervious area draining to the device may be modeled as grass in good condition when calculating the post development curve number.

In addition, under both conditions listed above, the total impervious area in the water quality calculations may be reduced relative to the impervious area reduction associated with the curve number credit.

If downspouts need to be piped away from building foundations to prevent damage to the foundations, the pipes must outfall at least ten (10) feet, preferable further, from any property line. If the downspouts are piped and the runoff cannot disperse in accordance with the above requirements, no stormwater credit is available.

(c) Disconnection of non-rooftop impervious runoff

Rooftop runoff that is disconnected from another impervious surface and directed over a pervious area will infiltrate into the soil or be filtered by the surface material. The longer the flow path of the water across

vegetated areas, the greater the filtering and infiltration of the runoff which in turn improves water quality and reduces downstream runoff.

Discharging run-off from impervious surfaces onto pervious surfaces through the use of pervious pavers, permeable paving surfaces, rain gardens/bioretention facilities, grassed swales, use of open road sections in lieu of curbed roads, and by grading the site so that run-off travels from an impervious surface to a pervious surface before being collected in a drainage system. All of these increase filtering and infiltration of stormwater before the flows become concentrated and this in turn improves water quality and reduces downstream run-off which means pipes, swales, ditches, and stormwater facilities can be smaller.

Avoid sending run-off from one impervious surface directly onto another impervious surface. Place pervious surfaces between impervious surfaces along the run-off path.

If the site is graded to disperse the impervious runoff as sheet flow through at least 50' of thick grass or other thick vegetation or through at least 25' of existing woodlands, 50% of the impervious area draining through the vegetation may be modeled as grass in good condition when calculating the post development curve number. If the impervious runoff is discharged into a properly designed and constructed bioretention facility/rain garden onsite, 100% of the impervious area draining to the device may be modeled as grass in good condition when calculating the post development curve number.

(d) Sheet flow

Maintain sheet flow for as long as possible before the run-off has to be collected in a stormwater conveyance system. Sheet flow increases infiltration and lengthens the time of concentration which in turn improves water quality and reduces run-off downstream. Spread out concentrated flows created by the development before they are discharged offsite using stilling basins, level spreaders, directing run-off through woodlands, or other means so the run-off returns to pre-development characteristics to meet the adequacy of outfall provision of this ordinance and to improve water quality and reduce run-off downstream.

(e) Grass channels in lieu of piping or hard surface channels

(f) Environmentally sensitive development

Maintaining/not disturbing environmentally sensitive areas such as streams, stream buffers, existing woodlands, existing steep slopes, wetlands, etc., the reduction of cut and fill, excavating, etc. and the appropriate balance of buildings and parking on the development site.

(g) Improvements to and the reduction in the impervious areas on the development site. Design parking lots with the minimum amount of hard surface required to meet the zoning regulations. If additional parking area is desired, the County strongly encourages the employee and/or overflow parking areas to be constructed in a more pervious material than asphalt or concrete. If the parking regulations require excessive parking for your type of development, discuss the issue with the County Staff. If the County Staff feels a reduction in the number of required parking spaces is justified, a variance can be submitted to the Board of Zoning Appeals to reduce the parking requirements which in turn will reduce the amount of impervious surface installed.

(h) Increased use of trees, shrubs and ground cover, which absorb up to 14 times more rainwater than grass and require less maintenance.

Any stormwater detention or retention pond shall also be designed to pass the post development 100 year storm (peak attenuation to the 100 year pre development rate is not required) through the pond without overtopping any portion of the dam. This can be accomplished through the principal spillway or an emergency spillway or using both. The emergency spillway shall be installed on virgin soil and is not to be placed on fill material or the dam. If it is not feasible to place the emergency spillway on virgin soil then the principal spillway shall be designed for the 100 year storm.

The overflow path through the site and from any stormwater management device for stormwater runoff above the design storm event, shall not adversely impact any onsite structures such as buildings and roadway stability.

Provide hydraulic calculations for stormwater facilities sealed by a design professional qualified to prepare hydraulic calculations in accordance with State of Tennessee law. As a minimum, the calculations shall include a pre and post development drainage area map, brief narrative, pre and post development runoff data, and routing calculations to determine the outflow rate from the stormwater management facility.

Provide location, size, details, and layout of proposed stormwater management. Provide appropriate details such as a profile through the principal spillway with cutoff trench, anti-seep control, trash rack details, compaction/backfill details or notes, riser detail, outlet stabilization, and emergency spillway detail for detention ponds and other details/sections as needed for the contractor to build the structures. The low flow opening in a riser structure and its overflow shall have a trash rack to prevent the opening, the riser, and/or the principal spillway from becoming clogged. The trash racks shall not be flat across the openings.

The location and amount of stormwater runoff leaving site after construction and from stormwater management measures proposed should be evaluated to protect adjoining and downstream properties and existing drainage facilities and systems. The plan must address the adequacy of outfalls from the development. When water is concentrated, what is the capacity of waterways and storm drains, if any, accepting stormwater off-site, and what measures including infiltration, sheet flowing into buffers, outfall setbacks, etc. are to be used to spread concentrated runoff and prevent the scouring of waterways and drainage areas off-site.

Outfall pipes from storm drain systems and stormwater management facilities shall be setback sufficiently from offsite properties to allow the concentrated water to spread out back to pre-development flow characteristics. Under no circumstance shall an outfall pipe, as measured from the end section, headwall, or pipe, if no end structure is used, be any closer than ten (10) feet from the offsite property unless a drainage easement from the offsite property owner is obtained and recorded. The outfall setback shall be determined by the design professional and shall be based on outflow rate and the receiving channel or pipe characteristics.

Stormwater discharge from a concentrated point such as a pipe outfall shall discharge onto rip rap or other velocity/energy dissipating method to reduce erosion potential. All rip rap or other stone used to reduce velocity shall be placed on a geotextile to prevent scouring and the stone from sinking into the underlying soil.

- (i) Maintenance of Stormwater Management Facilities Drainage Plan – Upon final site plan or subdivision plat approval, the maintenance of the stormwater plan shall remain the responsibility of the current landowner(s) and shall by no means be the enforcement duty or maintenance responsibility of the county except for those stormwater systems within county rights-of-way or other county-owned properties.

Stormwater management facilities or devices, including detention ponds, which are located in subdivisions, shall be located on a non-buildable lot or within an easement if located on a buildable lot. Any existing and proposed easements shall be shown on the construction drawings as well as the recorded final plat. The construction drawings and the final plat shall state who is responsible for the maintenance of the stormwater management devices. **The County shall not be responsible for the maintenance of stormwater management facilities or devices except for those within County rights-of-way or on other County owned properties.** (Amended May 20, 2013)

8-103.11 Illicit Discharge and Illegal Connections or Dumping – If the owner/operator of the site or project must design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants; at a minimum, such measures must be designed, installed, implemented and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash-water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

The following discharges are prohibited from construction sites:

1. Wastewater from washout of concrete, unless managed by an appropriate control.
2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
4. Soaps or solvents used in vehicle and equipment washing.

(A) Applicability - This section shall apply to any discharge entering the municipal separate storm sewer system that is not composed entirely of stormwater.

(B) Prohibition of illicit discharges -

1. No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of storm water. The commencement, conduct, or continuance of any non-storm water discharge to the municipal separate storm sewer system is prohibited.
 - a. Exceptions. Uncontaminated discharges from the following sources are permitted:
 - (1) Landscape irrigation or lawn watering with potable water;
 - (2) Diverted stream flows permitted by the State of Tennessee;
 - (3) Rising ground water;
 - (4) Groundwater infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers;
 - (5) Pumped groundwater;
 - (6) Foundation or footing drains;
 - (7) Water discharged from crawl space pumps;
 - (8) Air conditioning condensate;
 - (9) Springs;
 - (10) Individual, residential washing of vehicles;
 - (11) Flows from natural riparian habitat or wetlands;
 - (12) Swimming pools (if dechlorinated – typically less than one part per million chlorine);
 - (13) Street wash waters resulting from normal street cleaning operations;
 - (14) Discharges resulting from emergency firefighting activities;
 - (15) Discharges pursuant to a valid and effective NPDES permit issued by the State of Tennessee;
 - (16) Discharges necessary to protect public health and safety, as specified in writing by the County; and
 - (17) Dye testing permitted by the County.
 - b. Discharge due to water line flushing directly to the waters of the State of Tennessee is prohibited. Persons responsible for water line flushing activities are required to de-chlorinate discharges before such discharges come in contact with waters of the State of Tennessee.

- c. Discharge of swimming pool water directly to the waters of the State of Tennessee is prohibited. Persons responsible for water line flushing activities are required to de-chlorinate discharges before such discharges come in contact with waters of the State of Tennessee.
2. The County has the authority to identify areas that would be considered 'HOT SPOTS' for pollution runoff. These sites should be investigated for potential highly contaminated runoff and if found then enforcement action shall occur.

(C) Prohibition of illegal connections -

1. The construction, use, maintenance, continued existence of illegal connections to the municipal separate storm sewer system is prohibited.
1. This prohibition expressly includes, without limitation, illegal connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(D) Elimination of Discharges or Connections -

1. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge, may be required to implement, at the person's expense, the best management practices necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system.
2. Any person responsible for a property or premises where an illegal connection is located may be required, at the person's expense, to eliminate the connection to the municipal separate storm sewer system. Improper connections in violation of this resolution must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the receiving sanitary sewer agency.
3. Any drain or conveyance that has not been documented in plans, maps or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or occupant of that property upon receipt of written notice of violation from the Director requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be completed, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the Director.
4. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed in compliance with the provisions of this section.

(E) Notification of spills -

1. Notwithstanding other requirement of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging into storm water and/or the municipal separate storm water system, the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release.
2. In the event of a release of hazardous materials, the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. The person shall notify the Director in person or by telephone or facsimile no later than the next business day.
3. In the event of a release of non-hazardous materials, the person shall notify the Director in person or by telephone or facsimile no later than the next business day.

4. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the Director within three (3) business days of the telephone notice.
5. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least five (5) years.

(F) Authority

1. The Director or his/her designee(s) shall have the authority to enforce these Rules and Regulations.
2. All Sullivan County officials are hereby authorized to assist when and where appropriate in the enforcement of these Rules and Regulations.
3. The Director may require reports or records from the permittee or person responsible for eliminating the illicit discharge or illegal connection to insure compliance.

(G) Inspections by the County

1. The Director or his/her designee shall have the right to enter onto private properties for the purposes of investigating a suspected violation of these Rules and Regulations.
2. The owner/operator of any facility, operation or residence where an illicit discharge or illegal connection is known or suspected shall allow the Director or his/her authorized representative to have access to and copy at reasonable times, any applicable State or Federal permits related to the suspected or known discharge or connection, or any reports or records kept as a condition of these Rules and Regulations.
3. Failure on the part of an owner or operator to allow such inspections by the Director or his/her designee shall be a violation of these Rules and Regulations.

(H) Enforcement, Penalties, and Liability

1. It shall be unlawful for any person or entity to violate any provision or fail to comply with any of the requirements of these Rules and Regulations. The Director or his/her designee(s) shall have the authority to issue directives ordering violators to immediately cease and desist violating these Rules and Regulations and to issue a Stop Work Order directing violators to cease and desist any activity, which causes or contributes to the violation of these Rules and Regulations. If a person or entity has violated or continues to violate these Rules and Regulations, the Director or his/her designees may petition for a preliminary and permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.
2. In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of these Rules and Regulations is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.
3. Any person in violation of these Rules and Regulations shall be subject to a civil penalty not to exceed \$5000.00 for each offense per Tenn. Code Ann. §68-221-1101, a Stop Work Order, and/or civil damages. Each day such violation shall continue shall constitute a separate violation.
4. Failure to comply with a Stop Work Order shall constitute a separate violation, which shall be subject to a penalty of not to exceed Five hundred dollars (\$500.00). Each day such violation shall continue shall constitute a separate violation.

5. In order to gain compliance, the Director may notify other Sullivan County departments to deny service to the property until the site, facility, activity and/or residence has been brought into compliance with these Rules and Regulations.
6. Any person who violates any provision of these Rules and Regulations shall also be liable to the County for damages caused to the County by the violation. Such damages may include expenses incurred in investigating and enforcing violations of these Rules and Regulations including, but not limited to, attorney's fees, costs of litigation, sampling and monitoring expenses.
7. Upon the request of the Director, the attorneys for the County shall take appropriate legal action to enforce the provisions of these Rules and Regulations.
8. The remedies provided for in these Rules and Regulations are cumulative and not exclusive, and shall be in addition to any other remedies provided by law.
9. Neither the approval of a discharge under the provisions of these Rules and Regulations nor compliance with the conditions of such approval shall relieve any person of responsibility for damage to other persons or property or impose any liability upon the County for damage to other persons or property.

8-103.12 Notice of Termination – With the exception of residential subdivision developments, all other developments and projects that were required to obtain a *General Construction Permit* with TDEC, shall be required to submit a copy of the *Notice of Termination* letter to the County Staff prior to issuance of a *Certificate of Occupancy* from the County. Notices of Termination for residential developments shall not be issued until the last home is completed. It is the responsibility of the owner/developer to request *Notice of Termination* from the State.

*(Amendments to Article 8-103 were approved by County Commission in May of 2013
to meet current Clean Water Act, NPDES, Phase II Federal Requirements).*